In the claims:

1. (currently amended) A method for performing a medical test associated with glaucoma comprising

displaying a plurality of visual stimuli for observation by one eye of a patient;

detecting the patient's evoked brain potential signals in response to said stimuli through one or more electrodes attached to the patient's scalp;

recording said evoked brain potential ~~signal~~ signals detected for each stimulus displayed;

performing an automatic digital signal processing for a plurality of said recorded evoked brain potential signals ~~data~~ following the recording; and

displaying an indication of whether there is a high or low likelihood of glaucoma on a computer monitor based on said digital signal processing.

2. (currently amended) The method of claim 1 wherein

the visual stimulus is ~~composed~~ comprised of two patterns, an isolated check pattern and a uniform field pattern, displayed ~~alternatively~~ alternately in a periodic manner at a frequency of about twelve Hertz.

3. (currently amended) The method of claim 1 wherein

the ~~data~~ recording comprises

amplifying said ~~visual~~ evoked brain potential signals detected from said one or more electrodes attached to the patient's scalp;

converting said ~~visual~~ evoked brain ~~potentials~~ potential signals amplified from analog signals to digital signals.

4. (currently amended) The method of claim 1 further comprises

an automated procedure for evoked brain potential signal recording and digital signal processing; wherein

a computer processor controls both said evoked brain potential signal recording and said digital signal processing; and

the computer processor initiates said digital signal processing immediately following the completion of said evoked brain potential signal recording.

5. (currently amended) The method of claim 1 further wherein

the digital signal processing comprises

performing a Discrete Fourier Transform on a plurality of the evoked brain potential signals ~~data~~ recorded to obtain a plurality of fundamental frequency components of a plurality of the evoked brain potential signals ~~data items~~ corresponding to the periodic visual stimuli;

performing a multivariate statistical method to determine a signal-to-noise ratio for said plurality of fundamental frequency components;

comparing said signal-to-noise ratio with a preset critical value; and

determining if the likelihood of glaucoma is high or low based on said comparison.

6. (original) The method of claim 5 wherein

the multivariate statistical method is a T^2_{circle} method.

7. (currently amended) An apparatus for performing a medical test associated with glaucoma comprising

a computer processor;

a visual stimulus generating device for presenting visual stimuli to a patient;

a visual evoked potential recording and measuring device;

a computer monitor; and

a computer memory; wherein

the computer processor is programmed by computer software residing in the computer memory to:

display a set of visual stimuli on said visual stimulus generating device for observation by a patient;

control said recording and measuring device to record a plurality of visual evoked potential signals in response to said set of visual stimuli detected from one or more electrodes attached to the patient's scalp;

perform digital signal processing on the ~~data~~ plurality of visual evoked potential signals recorded; and

~~displaying~~ display an indication of whether there is a high or low likelihood of glaucoma on said computer monitor based on said digital signal processing.

8. (original) The apparatus of claim 7 wherein

the visual stimulus generating device is comprised of a graphics card and a video monitor.

9. (currently amended) The apparatus of claim 7 wherein

the set of visual stimuli is ~~composed~~ comprised of ~~two patterns,~~ an isolated check pattern and a uniform field pattern, displayed ~~alternatively~~ alternately in a periodic manner at a frequency of about twelve Hertz; and

wherein the ~~The~~ frequency ~~of the stimulus~~ and displaying alternately in a periodic manner ~~the sequence to display each stimulus~~ is controlled by said computer software.

10. (currently amended) The apparatus of claim 7 wherein

the visual evoked potential recording and measuring device comprises

an amplifier that enlarges the visual evoked potential signals detected from one or more electrodes attached to the patient's scalp;

an analog to digital ~~A/D~~ converter that converts said amplified visual evoked potential signals to digital signals, and provides said ~~digitized~~ digital signals to the computer processor; and wherein

~~The~~ the analog to digital converter has a digital sampling rate ~~of said A/D converter that~~ is controlled by said computer processor.

11. (currently amended) The apparatus of claim 7 further wherein

the digital signal processing comprises

performing a Discrete Fourier Transform on the plurality of recorded visual evoked potential signals ~~a plurality of the data recorded~~ to obtain a plurality of fundamental frequency components of a plurality of the recorded visual evoked potential signals ~~data items~~ corresponding to the periodic visual stimuli;

performing a multivariate statistical method to determine a signal-to-noise ratio for a plurality of said fundamental frequency components;

comparing said signal-to-noise ratio with a preset critical value; and

determining if the likelihood of glaucoma is high or low based on said comparison.

12. (original) The apparatus of claim 11 wherein

the multivariate statistical method is a T^2_{circle} method.

13. (new) An apparatus comprised of

an interactive device;

a computer processor;

a stimulus generating device which generates a visual stimulus on a display screen in response to the computer processor; and

a computer memory; and

wherein the computer processor causes a preset number of a plurality of visual stimulus presentations to be generated by the stimulus generating device following entry of a set of patient data into the computer processor via the interactive device;

and while displaying each of the plurality of visual stimulus presentations, the computer processor records a visual evoked potential signal, and saves a set of raw data relating to each visual evoked potential signal in the computer memory, such that there are a plurality of sets of raw data saved in the computer memory corresponding for the plurality of visual stimulus presentations.

14. (new) The apparatus of claim 13 wherein

following the saving of the plurality of sets of raw data, the computer processor automatically performs a discrete Fourier transform on the plurality of sets of raw data to obtain a plurality of Fourier components.

15. (new) The apparatus of claim 14 wherein

the plurality of Fourier components include a Fourier fundamental component; and

wherein following the performance of the discrete Fourier transform, the computer processor automatically calculates a signal to noise ratio of the Fourier fundamental component, and compares the signal to noise ratio with a preset critical value to determine whether there is a likelihood of glaucoma.

16. (new) The apparatus of claim 15 further comprising

a computer monitor; and

wherein the computer processor provides an indication on the computer monitor of whether there is a high or low likelihood of glaucoma based on the comparison of the signal to noise ratio with the critical value.

17. (new) A method comprising the steps of

using a computer processor to cause a preset number of a plurality of visual stimulus presentations to be generated by a stimulus generating device following entry of a set of patient data into the computer processor via an interactive device;

and while displaying each of the plurality of visual stimulus presentations, using the computer processor to record a visual evoked potential signal, such that there are a plurality of visual evoked potential signals, at least one for each of the plurality of visual stimulus presentations, and saving a set of raw data for each visual evoked potential signal in the computer memory, such that there are a plurality of sets of raw data saved in the computer memory corresponding to the plurality of visual stimulus presentations.

18. (new) The method of claim 17 further comprising

using the computer processor to automatically perform a discrete Fourier transform on the plurality of sets of raw data, after the saving of the plurality of sets of raw data, to obtain a plurality of Fourier components, including a Fourier fundamental component.

19. (new) The method of claim 18 further comprising

using the computer processor to automatically calculate a signal to noise ratio of the Fourier fundamental component, and to compare the signal to noise ratio with a preset critical value to determine whether there is a likelihood of glaucoma, after the performance of the discrete Fourier transform.

20. (new) The method of claim 19 further comprising

displaying an indication on a computer monitor of whether there is a high or low likelihood of glaucoma based on the comparison of the signal to noise ratio with the preset critical value.